

## CLAIM AMENDMENTS

### IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. (Original) A direct-to-digital holography system, comprising:  
an illumination lens operable to focus a reference beam;  
a beam splitter optically coupled to the illumination lens by the reference beam; and  
a reference mirror located at a waist of the reference beam, the reference beam mirror operable to eliminate a reference objective.
2. (Original) The system of Claim 1, wherein the beam splitter comprises a cube beam splitter operable to eliminate first order reflections.
3. (Original) The system of Claim 1, further comprising a quarter-wave plate optically coupled between the beam splitter and the reference mirror.
4. (Original) The system of Claim 1, wherein the reference beam comprises a Gaussian beam.
5. (Original) The system of Claim 1, wherein the reference mirror comprises a flat mirror.
6. (Original) The system of Claim 1, further comprising the reference mirror operable to maintain optical symmetry of a reference arm and a target arm.
7. (Original) The system of Claim 1, further comprising the reference mirror operable to form a first wavefront substantially similar to a second wavefront formed by the reference objective.

8. (Original) A method for acquiring a complex image in a direct-to-digital holography system, comprising:

focusing a reference beam with an illumination lens, the reference beam including a waist;

transmitting at least a portion of the reference beam through a beam splitter;  
and

reflecting the portion of the reference beam from a reference mirror located at the waist of the reference beam.

9. (Original) The method of Claim 8, further comprising the reference mirror operable to replace a reference objective.

10. (Original) The method of Claim 9, further comprising forming a combined wavefront at a digital recorder, the wavefront substantially similar to a wavefront produced by the reference objective.

11. (Original) The method of Claim 8, further comprising the reference mirror operable to maintain optical symmetry of a reference arm and a target arm.

12. (Original) The method of Claim 8, wherein the reference beam comprises a Gaussian beam.

13-32. (Canceled)